

## **REMARKS**

### **Rejections under 35 U.S.C. § 102**

Claims 1-5, 8-11, and 15-20 stand rejected under 35 U.S.C. § 102 as being anticipated by Kim. Applicant submits that Kim fails to disclose microarrays of polymeric biomaterials disposed on a cytophobic surface comprising a hydrogel, as recited in amended claims 1 and 2. The Examiner cites Kim's disclosure of a "polymethylacrylate" as a hydrogel, "absent evidence to the contrary" (page 6). However, Kim provides such evidence. At column 6, line 41, three polymers, polystyrene, poly(methyl acrylate), and polycarbonate, are described as suitable substrates. At column 11, lines 23-24, polystyrene, poly(methyl methacrylate) and polycarbonate are described as "rigid materials." In addition, all the other substrate materials proposed by Kim at column 6, 39-41, e.g., glass, are also rigid. Thus, Kim's disclosure indicates to one of skill in the art that a rigid material should be employed as a substrate, in contrast to amended claims 1 and 2.

The Examiner does not accept that the Declaration under 37 C.F.R. 1.131 submitted by Applicant removes Kim as a reference. Applicant respectfully disagrees. Nonetheless, Applicant submits that the arguments and amendments herein render any disagreement about the Declaration moot. Applicant submits that claims 1-5, 8-11, and 15-20 are patentable in view of Kim.

### **Rejections under 35 U.S.C. § 103**

Claims 1-6, 8-11, 15-20 and 57 stand rejected under 35 U.S.C. § 103 as being unpatentable in view of Schultz, Sheu, Kapur, and Koob. Applicant respectfully disagrees. Applicant submits that Schultz fails to disclose a cytophobic surface comprising a hydrogel, as recited in amended claims 1 and 2. Schultz discloses a variety of substrate materials at column 11, lines 55-63, noting that the substrate should provide a "rigid support" (line 56). Applicant submits that none of Sheu, Kapur, and Koob remedied the failure of Schultz to disclose or suggest the claimed invention. Sheu fails to disclose the use of a hydrogel. Rather, a coating is deposited on a polyethylene surface from solution, following which the solvent is evaporated (Abstract). In contrast, hydrogels entrap solvent, usually water. Likewise, Kapur fails to disclose a hydrogel. Rather, a hydrophobic surface is modified to have hydrophilic regions by

modifying the identity of a chemical group at the surface, either by chemisorbing species such as aminosilanes or by reacting the surface with hydrophilic materials (see column 13, line 50-column 15, line 59). Koob fails to disclose an array or the binding of a polymeric element to a cytophobic surface. Rather, Koob discloses the production of bulk materials for implantation into a tissue site (e.g., paragraphs 0025-0026, 0087, 0089). Cells are meant to infiltrate into the composition (e.g., paragraphs 0086, 0090, 0093). In contrast, the claimed invention provides a two-dimensional array of polymeric biomaterials on a substrate. Applicant submits that Koob is the only one of the references cited in this rejection to even suggest the use of a hydrogel in any manner (paragraph 0089), and that none of the cited references teach or suggest how to deposit a hydrogel onto a substrate or how to deposit a polymeric biomaterial element onto a hydrogel, as recited in the claims. Rather, Koob discloses that a liquid gelatin may be combined with a second material to improve the bulk mechanical properties of a gel/material composite. Applicant submits that claims 1-6, 8-11, 15-20, and 57 are patentable in view of Schultz, Sheu, Kapur, and Koob, whether considered separately or in any combination.

Claims 1-6, 8-11 and 15-20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kim and Koob. Applicant submits that Koob fails to remedy the failure of Kim to teach a polymeric biomaterial element deposited on a hydrogel, as recited in claims 1 and 2. As discussed above, Koob teaches the combination of two materials to form a composite. Kim teaches the use of rigid two dimensional substrates. There is no suggestion in either Kim or Koob that it would be appropriate to deposit a hydrogel on a surface. Applicant submits that claims 1-6, 8-11 and 15-20 are patentable in view of Kim and Koob, whether considered separately or in combination.

Claim 57 stands rejected under 35 U.S.C. § 103 as being unpatentable over Kim and Kapur. Applicant submits that Kapur fails to remedy the failure of Kim to disclose the use of a hydrogel, as recited in claims 1 and 2. Claim 57 depends from claim 10, which depends from claims 1 and 2. Applicant submits that claim 57 is patentable over Kim and Kapur, whether considered separately or in combination.

### Conclusion

Based on the arguments presented above, it is submitted that the pending claims, as amended herein, are allowable. Applicant would like to thank the Examiner for his thoughtful

comments and careful consideration of the case. If a telephone conversation would help expedite prosecution of this case, the Examiner is invited to contact the undersigned at (617) 248-4061. A petition for extension of time, a request for continued examination, and the appropriate fees are submitted herewith. Additionally, please charge any fees that may be required, or credit any overpayment, to our Deposit Account No. 03-1721.

Respectfully submitted,

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